We Claim:

1. A high-temperature polymer electrolyte membrane (HTM) fuel cell operating substantially independently of the water content in the cell.

2. The HTM fuel cell according to claim 1, comprising a desiccant.

3. The HTM fuel cell according to claim 1, including an electrode with a solid support made from silicon carbide.

4. The HTM fuel cell according to claim 3, wherein said electrode includes an active catalyst layer being applied directly to the membrane.

5. An HTM fuel cell installation, comprising an HTM fuel cell unit having structural components and being operable in at least one of an operating pressure up to 0.3 bar vacuum and a temperature higher than the boiling point of water and lower than at least one of the decomposition and the melting temperature of the structural components.

6. The HTM fuel cell installation according to claim 5, wherein said HTM fuel cell unit is operable at least at one of an operating pressure of 0.3 to 5 bar absolute and at an operating temperature of 80°C to 300°C.

7. The HTM fuel cell installation according to claim 5, including a device with a process gas being preheated before entering the system.

8. The HTM fuel cell installation according to claim 5, including a device with a coolant being preheated before entering the system.

9. The HTM fuel cell installation according to claim 5, including a device for measuring the temperature.

10. The HTM fuel cell installation according to claim 5, including a device for controlling the temperature.

11. The HTM fuel cell installation according to claim 5, including a latent heat storage device for maintaining a predeterminable temperature in at least part of the stack while not operating.

12. The HTM fuel cell installation according to claim 5, including a thermal insulation for maintaining a predeterminable temperature in at least part of the stack while not operating.

13. The HTM fuel cell installation according to claim 5, including a local heater for maintaining a predeterminable temperature in at least part of the stack while not operating.

14. The HTM fuel cell installation according to claim 11, wherein said latent heat storage material is paraffin.

15. The HTM fuel cell installation according to claim 7, including a device for filtering the process gas before the process gas enters said HTM fuel cell unit.

16. The HTM fuel cell installation according to claim 8, including a device for filtering the coolant before the coolant enters said HTM fuel cell unit.

17. The HTM fuel cell installation according to claim 5, including a blower.

18. The HTM fuel cell installation according to claim 5, including a compressor.

19. The HTM fuel cell installation according to claim 7, including a device for preparing the process gas.

20. The HTM fuel cell installation according to claim 5, including:

a stack with an insulated part and an uninsulated part; and

a membrane separating said insulated part from said uninsulated part.

21. The HTM fuel cell installation according to claim 5, including:

a stack with an insulated part and an uninsulated part; and

a convection barrier separating said insulated part from said uninsulated part.

22. The HTM fuel cell installation according to claim 5, including:

a stack with an insulated part and an uninsulated part; and

a thermal barrier separating said insulated part and said uninsulated part.

23. The HTM fuel cell installation according to claim 5, including:

a stack with an insulated part and an uninsulated part; and

a flap separating said insulated part and said uninsulated part.

24. The HTM fuel cell installation according to claim 5, including:

a pressure-carrying external housing; and

a stack accommodated in said pressure-carrying external housing.

25. The HTM fuel cell installation according to claim 5, including a modular preparer for preparing media.

26. The HTM fuel cell installation according to claim 5, including a reformer for connecting to a temporary hydrogen storage device.

27. The HTM fuel cell installation according to claim 5, including a gas-cleaning installation.

28. The HTM fuel cell installation according to claim 5, including a closable feed opening.

29. The HTM fuel cell installation according to claim 28, including a process-gas feed line connected to said closable feed opening.

30. The HTM fuel cell installation according to claim 28, including a coolant feed line connected to said closable feed opening.

31. The HTM fuel cell installation according to claim 5, including a cooler for a single-cell.

32. The HTM fuel cell installation according to claim 5, including a cooler for multiple cells.

33. The HTM fuel cell installation according to claim 5, wherein said HTM fuel cell unit operates at a voltage between 150 V and 500 V.

34. The HTM fuel cell installation according to claim 5, including a device for discharging liquid water.

35. The HTM fuel cell installation according to claim 5, including:

a fuel cell stack; and

two devices for tapping current being disposed at said fuel cell stack.

36. A method for operating an HTM fuel cell, which comprises at least one of:

pressuring an HTM fuel cell stack between 0.3 and 5 bar absolute; and

maintaining a temperature of the HTM fuel cell stack between 80°C to 300°C.

37. The method according to claim 36, which further comprises preheating a process gas before introducing the process gas into the HTM fuel cell stack.

38. The method according to claim 36, which further comprises:

releasing a cooling medium from a cooling system when the cooling system is not operating; and

admitting the cooling medium into the cooling system at least before starting the fuel cell stack.

39. The method according to claim 38, which further comprises admitting the cooling medium into the cooling system while starting the fuel cell stack.

40. The method according to claim 38, which further comprises preheating the cooling medium.

41. The method according to claim 38, which further comprises controlling a temperature of the cooling medium.

42. The method according to claim 37, which further comprises guiding the process gases in countercurrent.

48. The method according to claim 37, which further comprises guiding the process gases in crosscurrent.

49. The method according to claim 38, which further comprises guiding the cooling medium in countercurrent.

50. The method according to claim 38, which further comprises guiding the process gases in crosscurrent.

51. A method for operating an HTM fuel cell installation, which comprises:

providing a stack of HTM fuel cell units; and

at least one of pressuring an HTM fuel cell stack between 0.3 and 5 bar absolute and maintaining a temperature of the HTM fuel cell stack between 80°C to 300°C.

52. The method according to claim 51, which further comprises blowing a fuel cell unit with a medium.

53. The method according to claim 52, wherein the blowing step is blowing through the fuel cell unit.

54. The method according to claim 52, wherein the blowing step is blowing dry the fuel cell unit.

55. The method according to claim 52, which further comprises closing the fuel cell unit after the blowing step.

56. The method according to claim 51, which further comprises blowing a cooling system connected to the fuel cell stack.

57. The method according to claim 56, wherein the blowing step is blowing through the cooling system.

58. The method according to claim 56, wherein the blowing step is blowing dry the cooling system.

59. The method according to claim 56, which further comprises closing the cooling stem after the blowing step.

60. The method according to claim 51, which further comprises:

cooling the stack with a primary cooling circuit; and

cooling the stack with a secondary cooling circuit.

61. The method according to claim 51, which further comprises:

using an electrolyte in the HTM fuel cells of the stack;

autothermally starting the stack by heating the HTM fuel cells to a higher temperature than the freezing point of the electrolyte when the system is not operating.

62. The method according to claim 36, which further comprises binding liquid water bound in the cell so that the water droplets do not impede the flow and diffusion of gas.

63. The method according to claim 36, which further comprises discharging from the cell liquid water bound in the cell so that the water droplets do not impede the flow of gas and diffusion of gas.

64. An HTM fuel cell installation, comprising an HTM fuel cell unit having at least one of a maximum temperature difference of no more than 30 K and a maximum pressure drop of no more than 150 mbar.

65. An HTM fuel cell installation, comprising an HTM fuel cell unit tolerating up to 10,000 ppm of carbon monoxide in a process gas.

66. An HTM fuel cell installation, comprising an HTM fuel cell unit using air as an oxidant and regulating a temperature of said HTM fuel cell unit with reaction air.

67. A method for operating an HTM fuel cell installation, which comprises including up to 10,000 ppm of carbon monoxide in a process gas.